

Int 8. (Amended) A nucleic acid encoding a 5'OT-EST polypeptide, wherein said polypeptide comprises a sequence selected from the group consisting of the sequences set forth in any one of SEQ ID Nos. 2, 4, or 6, and sequences which are at least 90% homologous to said sequences set forth in any one of SEQ ID Nos. 2, 4, or 6.

9. (Amended) The nucleic acid of claim 8, having a sequence selected from the group consisting of SEQ. ID. Nos. 1, 3, 5, 7, 16 or 17, or a sequence which is at least 90% homologous to SEQ ID Nos. 1, 3, 5, 7, 16, or 17.

ES 10. (Amended) The nucleic acid of claim 9, comprising the sequence
ATGTTGCGGGCTTTGAACCGCCTGGCCGCGCGGCCCGGGGGCCAGCCCCCAACCCT
GCTCCTTCTGCCCCGTGCGCGGCCACGGCCCCGCTCATTCTCGGCTCCTTTTTCCTCG
CAGGATAGC, or an equivalent sequence which encodes the same polypeptide having regard to the degeneracy of the nucleic acid code, or a sequence at least 90% homologous thereto.

11. (Amended) A nucleic acid vector comprising a nucleic acid sequence of any one of claims 8 to 10.

12. (Amended) The vector of claim 11, wherein said vector is a cosmid vector.

13. (Amended) The vector of claim 11 or 12 further comprising one or more sequences selected from the group consisting of sequences of the coding region of the oxytocin (OT) gene, the coding region of the vasopressin (AVP) gene, or the coding region of the human growth hormone (hGH) gene.

14. (Amended) A vector of claim 12, wherein said vector has the structure of cVO14 as set forth in Figure 4 (SEQ. ID. No. 17).

15. (Amended) A cell transformed with a vector of any one of claims 11 to 14.

ES 16. (Amended) A method for producing a 5'OT-EST polypeptide having a sequence selected

EF from the group consisting of the sequences set forth in any one of SEQ ID Nos. 2, 4, 6, or sequences which are at least 90% homologous to said sequences set forth in any one of SEQ ID Nos. 2, 4, or 6, comprising transforming a cell with a vector of any one of claims 11 to 14 and culturing the cell to produce the polypeptide.

28. (Amended) A diagnostic reagent for the detection of mutations, polymorphisms or other changes in 5'OT-EST, which may predispose an individual to obesity, comprising at least one detectably labeled nucleic acid probe which is capable of hybridizing to 5'OT-EST or a sequence at least 90% homologous to 5'OT-EST.

Please add claims 30-34

30. (New) The nucleic acid of claim 8, wherein said 5'OT-EST polypeptide comprises an amino acid sequence encoded by at least one exon selected from the group consisting of exons w, x, y, or z as set forth in SEQ ID No. 16.

31. (New) The nucleic acid of claim 8, wherein said 5'OT-EST polypeptide is a mutant 5'OT-EST polypeptide which, *in vivo*, modulates the obesity of an animal which expresses said mutant 5'OT-EST polypeptide.

E 32. (New) The nucleic acid of claim 30, wherein said animal which expresses said mutant 5'OT-EST polypeptide is a transgenic animal comprising a transgene encoding said mutant 5'OT-EST polypeptide.

33. (New) The nucleic acid of any one of claims 8, 29, 30, or 31 wherein said 5'OT-EST polypeptide comprises the sequence PRPRSFSAPFSQDS.

34. (New) The nucleic acid of any one of claims 8, 29, 30, or 31 wherein said 5'OT-EST polypeptide comprises the sequence

MLRALNRLAARPGGQPPTLLLLPVRGPRPRSFSAPFSSQDS.